SUMMARY AND CONCLUSIONS
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The present project work entitled, "Electroencephalography and epilepsy in cerebral palsy" was performed over 50 patients of cerebral palsy. Every patient was classified according to the classification proposed by American Academy of cerebral palsy (Down and Hill, 1980). Detailed perinatal history and history of events during infancy and childhood, up to the age of 5 years, was then asked for, from the mother of the patient. Special emphasis was imparted to the history of seizures. Details of developmental milestones were asked in every case individually. Complete physical examination was performed in every case with special emphasis to neurological examination, Fundus examination and X-ray skull, both A.P. and lateral views were done in all the cases. Routine electroencephalographic recording was done in every patient, who was sedated before hand. Observations were tabulated and data analysed.

Age of the patients ranged from 7 months to 10 years. Males dominated in this study and male: female ratio was 16:9. Perinatal factors were most important in the causation of cerebral palsy notably
Birth Asphyxia (44%) and Prematurity (30%). Among the events of infancy and childhood, Post-infective pathology (16%) was the most common precipitating factor.

The sample was dominated by spastic patients who constituted the bulk (76%) of this series. Among them diparesis was the commonest motor defect as they only comprised of nearly half (44%) of the total study material. Hypotonic cerebral palsy was the next commonest type, observed by us in 14% cases. Athetosis and ataxic forms were found to be rare.

Epilepsy is a fairly common problem as 36% patients, ever experienced seizures in their life. The clinical type of seizure, observed by us, in descending order was - generalized tonic-clonic (43%), Myoclonus (18%), generalised tonic (10.7%), focal (10.7%), Psychomotor (7.1%), mixed (7.1%) and generalised clonic (3.2%). Incidence of seizures was highest in hypotonic type in which 65.7% had epilepsy. This was followed by spastic variety, where 33% were epileptics.
Developmental retardation is a very important manifestation of cerebral palsy, as mean developmental quotient (D.Q.) of our patients was 34.9%, with maximum retardation in hypotonic cerebral palsy. More or less, similar extent of developmental retardation had been observed in spastic tripareisis and athetosis but such emphasis could not be given to them as both these types were represented by 1 (2%) patient only. Least retardation of development was seen in spastic hemiparesis (Left).

60% of our patients had abnormal electroencephalograms. Spastic patients had quiet fair (95%) chances of EEG abnormality though maximum chances of EEG abnormality were in hypotonic patients as 70% of these patients had abnormal EEGs. The EEG defects are uncommon/rare in ataxia and athetosis. Out of all the patients having abnormal EEG, one third no seizures at all. Quiet a common (25.6%) number of patients had focal changes in EEG and out of them, in 60-90% cases the lateralization was correct i.e. changes were seen in the opposite hemisphere. Out of all the patients having EEG defects, 66.6% had Developmental Quotient below the mean value (34.9%). We also observed that chances of EEG-abnormality were more, in more severe developmental retardation. Also, epileptics had quiet
a significant developmental retardation as 65% of
them had D.Q. below 50%.

Following conclusions could be drawn from
present study:

1- Males are predominately affected as male:
female ratio was 16:9.

2- Birth Asphyxia and Prematurity are the two
most common etiological factors as these
only were responsible for two third cases.

3- Spastic out number any other clinical type
of cerebral palsy as 76% patients belonged
to this group.

4- Seizure disorders are very frequent in
cerebral palseid children as more than
half (56%) had associated epilepsy. Hypotonic
type in general and hypotonic diparesis in
particular are more commonly complicated by
epilepsy. The commonest type of seizure disorder
is generalised tonic-clonic (43%) followed by
Myoclonus (18%).

9- Developmental Retardation is usually always
there in cerebral palsey as mean development
quotient was 54.9%. Maximum developmental
retardation was apparent in hypotonic cerebral palsy while least retardation was a feature of spastic hemiparesis (Left).

6- Electroencephalographic abnormalities are quiet frequent in cerebral palsy as 60% patients were having essentially abnormal records. Chances of EEG abnormality are more if epilepsy is associated. Moreover chances of EEG-abnormality are more in hypotonic cerebral palsy followed by spastic variety.

7- High degree of concordance exists between laterality of clinical findings and EEG findings. Asymmetry constitutes the most significant EEG-abnormality in asymmetrical types of cerebral palsy like hemiparesis. In these electroencephalograms, amplitude seems to have more localising value than frequency. Suppression of voltage production, especially reduced voltage of spindles is reliable lateralising sign.

8- One should very cautiously look for epilepsy in these patients as pathophysiological state which underlies epilepsy does not necessarily
express itself in major convulsions or in obvious clinical seizures. The minor manifestations of epilepsy, if present are likely to be overlooked or discounted.

9- Higher is the developmental retardation, more are the chances of E.E.G.-abnormality.

10- Electroencephalography adds another dimension to our view of cerebral palsy. In combination with other parameters of evaluation, it is useful for diagnosis and prognosis.